2N® SIP Speaker

Public Address Paging

Installation manual

Version 2.2

www.2n.cz

The 2N TELEKOMUNIKACE a.s. is a Czech manufacturer and supplier of telecommunications equipment.

The product family developed by 2N TELEKOMUNIKACE a.s. includes GSM gateways, private branch exchanges (PBX), and door and lift communicators. 2N TELEKOMUNIKACE a.s. has been ranked among the Czech top companies for years and represented a symbol of stability and prosperity on the telecommunications market for almost two decades. At present, we export our products into over 120 countries worldwide and have exclusive distributors on all continents.

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2N TELEKOMUNIKACE a.s. administers the FAQ database to help you quickly find information and to answer your questions about 2N products and services. On www.faq.2n.cz you can find information regarding products adjustment and instructions for optimum use and procedures „What to do if...".

2N TELEKOMUNIKACE a.s. hereby declares that the 2N® SIP Speaker product complies with all basic requirements and other relevant provisions of the 1999/5/EC directive. For the full wording of the Declaration of Conformity see the CD-ROM (if enclosed) or our website at www.2n.cz.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The 2N TELEKOMUNIKACE a.s. is the holder of the ISO 9001:2009 certificate. All development, production and distribution processes of the company are managed by this standard and guarantee a high quality, technical level and professional aspect of all our products.

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1. Product Overview

In this section, we introduce the **2N® SIP Speaker** product, outline its application options and highlight the advantages following from its use. The section also includes safety precautions.

Here is what you can find in this section:

- 1.1 Components and Associated Products
- 1.2 Terms and Symbols

Basic Properties

2N® SIP Speaker is a versatile sound transmission system for IP networks. It is designed as a universal VoIP telephone with an audio output/input, button and switched circuit connection option. It finds a variety of applications – in schools, hospitals, office buildings, hotels, production halls, shopping centres, bus terminals, airports and so on. You can monitor the events in the **2N® SIP Speaker** area using an integrated streaming server.

2N® SIP Speaker is a stand-alone SIP-based sound decoder and converter with an amplifier. **2N® SIP Speaker** communicates with the other audio system components via the SIP Proxy or directly via a specified address.

Press the attached button to set up a call to up to three predefined numbers or addresses, with calls being transferred automatically at no answer. Configure the button function using an integrated calendar to make sure that the called subscriber is always accessed.

You can make use of a lot of convenient VoIP services thanks to the integrated SIP such as call forwarding at no answer (to another worksite, recording machine or mobile phone) and call transfer (from the secretary to the required person, e.g.).

2N® SIP Speaker is equipped with a switch for you to control the electric door lock from any telephone (by tone-entering the password).

You can manage your **2N® SIP Speaker** unit via a configuration web interface, by

pushing the unit buttons or with a remote controller.

Advantages of Use

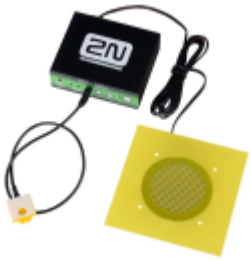
- Operable in the Ethernet network
- Ethernet-based power supply – PoE
- SIP
- Integrated administration web server
- 1 programmable button
- Streamed audio support
- Integrated calendar with programmable DAY/NIGHT/WEEKEND modes
- Applicable as standard VoIP telephone/communicator
- DTMF detection according to RFC2833, in-band and SIP-INFO

Basic Features

- 10/100Base-TX LAN interface
- 12 V DC / 1,8 A or PoE 802.3af supply
- Integrated 30 W amplifier
- Line/headset output
- Colour LED operational status signalling
- Universal galvanically isolated output
- Universal galvanically isolated digital input
- Two volume control buttons
- Infrared remote control

1.1 Components and Associated Products

Basic Unit

	
914401E **2N® SIP Speaker**	**914490E** **2N® SIP Speaker** set with speaker and mic

Accessories

91378100E/US PoE Injector	**914102E** 12 V DC / 2 A Adapter	**914103E** Remote Controller for volume adjustment

Associated Products

914420E **2N® SIP Speaker** with loudspeaker for wall mount	**914430E** **2N® SIP Speaker** with loudspeaker for flush mount

1.2 Terms and Symbols

The following symbols and pictograms are used in the manual:

Safety

- **Always** abide by this information to prevent persons from injury.

Warning

- **Always** abide by this information to prevent damage to the device.

Caution

- **Important information** for system functionality.

Tip

- **Useful information** for quick and efficient functionality.

Note

- Routines or advice for efficient use of the device.

2. Description and Installation

In this section, we describe the **2N® SIP Speaker** product and its installation.

Here is what you can find in this section:

- 2.1 Before You Start
- 2.2 Mechanical Installation
- 2.3 Electric Installation
- 2.4 Product Description

2.1 Before You Start

Product Completeness Check

Before installing this product, check whether the product delivery includes:

- 1× **2N® SIP Speaker**
- 4× self-adhesive device feet
- 1× 5-pin terminal block
- 1× 4-pin terminal block
- Quick User Manual
- Certificate of Warranty

Installation Conditions

- **2N® SIP Speaker** is to be connected to the LAN.
- **2N® SIP Speaker** is designed for indoor use.
- **2N® SIP Speaker** may not be operated in damp environment.

2.2 Mechanical Installation

If you intend to use your **2N® SIP Speaker** unit in various interiors, please stick the four feet included in the delivery onto the bottom side of the device to avoid scratching of the underlying surface.

Surface Mounting

Use the L-profiles (separate accessories – Part No. 914105E) to mount your **2N® SIP Speaker** unit on a wall or another solid surface. Insert the L-profiles in the sides of the assembly and fit them with four screws to keep the device in place. You can use the dowels and screws included in the delivery for wall mounting. Follow the instructions below while drilling the mounting holes.

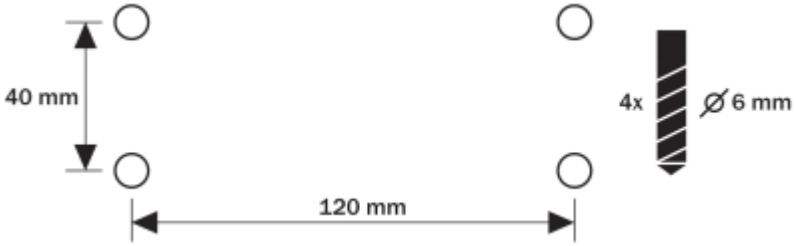


Figure: Mounting Holes

2.3 Electric Installation

Electric Installation Step by Step

It is very easy to connect **2N® SIP Speaker** electrically. Follow the steps below to avoid equipment damage or electrical injury:

- Connect the microphone, loudspeaker, headset or external amplifier.
- Connect the digital input and output.
- Connect the UTP cable.
- Connect a 12V power supply (unless PoE is used).

> ⚠ **Caution**
>
> - Be sure to connect the **2N® SIP Speaker** power supply as the last step. The same applies to PoE supply from the LAN.

Loudspeaker Connection

2N® SIP Speaker is equipped with a power amplifier for 1 or 2 loudspeakers. The loudspeakers to be used must have the nominal impedance of 4–8 Ω each. Refer to the table below for possible configurations and related maximum power outputs (sinus, THD < 1 %):

Loudspeaker(s)	12 V / 2 A	PoE
Two 4 Ω	2× 10 W	2× 5 W
Two 8 Ω	2× 9 W	2× 5 W
One 4 Ω	1× 18 W	1× 10 W
One 8 Ω	1× 12 W	1× 10 W

Use the **R +** and **L –** or **L +** and **R –** terminals.

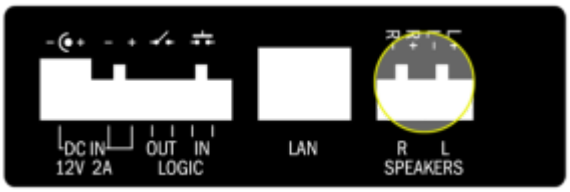


Figure: Loudspeaker Connection

Headset/External Amplifier Connection

2N® SIP Speaker is equipped with a headset/external amplifier output. The 3.5mm jack is available on the front panel.

Figure: Audio Output Connection

Microphone/Line Connection

2N® SIP Speaker is equipped with a microphone/external supply output. The 3.5mm jack is available on the front panel. Use electret microphone for connection.

Figure: Audio Input Connection

Digital Output Connection

2N® SIP Speaker is equipped with a passive output relay switch for light signalling/external amplifier/alarm activation. The output is available on terminals marked **LOGIC OUT** and allows for switching of up to 24V/1A AC/DC loads. By default, the output is in the NO (normally open) state.

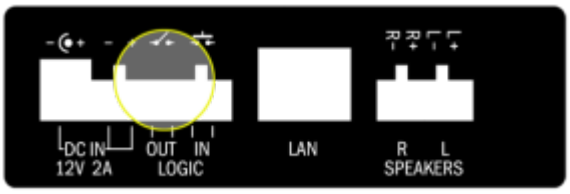


Figure: Digital Output Connection

Warning

- Do not exceed the upper voltage and current limits to avoid irreversible damage of the equipment.

Digital Input Connection

2N® SIP Speaker is equipped with a digital input for an optional button, movement sensor or other applications. This input is available on the **LOGIC IN** terminal.

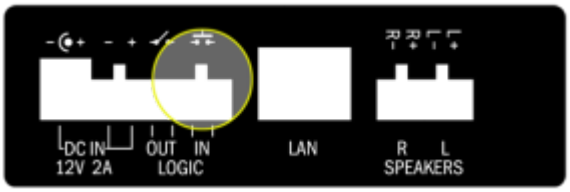


Figure: Digital Input Connection

Warning

- Do not exceed the maximum voltage values (24V) applied to the **LOGIC IN** input to avoid irreversible damage of the equipment.

LAN Connection

2N® SIP Speaker can be connected to a standard local area network using a LAN interface via the RJ-45 connector on the back panel. Always use CAT-5d or higher class cables for reliability reasons.

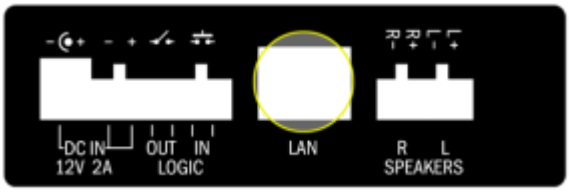


Figure: LAN Connection

The LAN interface is equipped with the Auto MDIX function for automatic straight/cross-over cable detection.

The LAN interface can also be used for the **2N® SIP Speaker** power supply through active network elements or injectors meeting the IEEE 802.3af standard.

Note

- With PoE, the integrated amplifier power output is limited to 10 W. To utilise the maximum power output of the amplifier, feed 2N® SIP Speaker from a 12V DC/1.8A external power supply.

Power Supply Connection

2N® SIP Speaker can be fed using active network elements or PoE injectors via the LAN interface. In case this option is unavailable, use a 12V DC/2A (Part No. 914102E) power supply or another power supply on condition that you keep the nominal values included in the Mechanical and Electrical Parameters subsection.
Connect the 12V DC power supply either to the back panel supply connector marked **DC IN**, or terminals marked **DC IN +** and **DC IN –**.

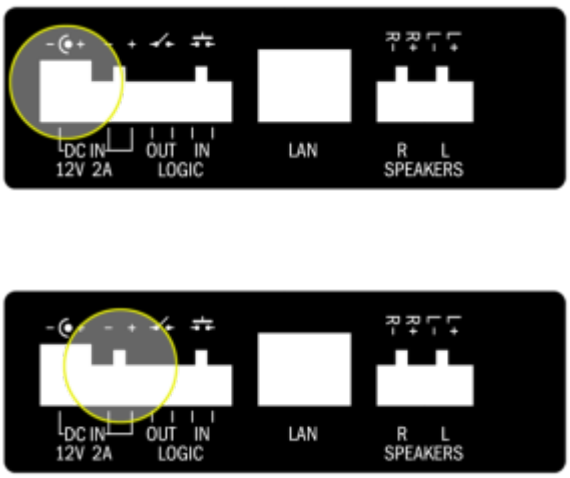


Figure: Power Supply Connection

Warning

- If you use an adapter other than the recommended one, do not exceed the nominal supply voltage value of 12V. Also make sure that the supply voltage polarity is correct. Exceeding nominal values and/or incorrect connection may lead to irreversible damage of the equipment.

2.4 Product Description

2N® SIP Speaker is an Ethernet audio converter designed for public sound distribution. It is connected to and communicates with the SIP Proxy server via telephone calls. This guarantees compatibility with all SIP-based systems.

The main principle of the **2N® SIP Speaker** operation is to convert an audio signal between the Ethernet and audio interfaces. Therefore, **2N® SIP Speaker** is equipped with an integrated 2× 10 W amplifier for direct loudspeaker connection.

You can control **2N® SIP Speaker** with two buttons on the front panel or using an infrared remote controller.

2N® SIP Speaker is equipped with a digital input and output, which extend the converter options and may be helpful in special applications.

Use an integrated web interface for **2N® SIP Speaker** configuration. Apply the **2N® Helios IP Network Scanner** to search all the **2N® SIP Speaker** units connected.

2N® SIP Speaker Front and Back Panels

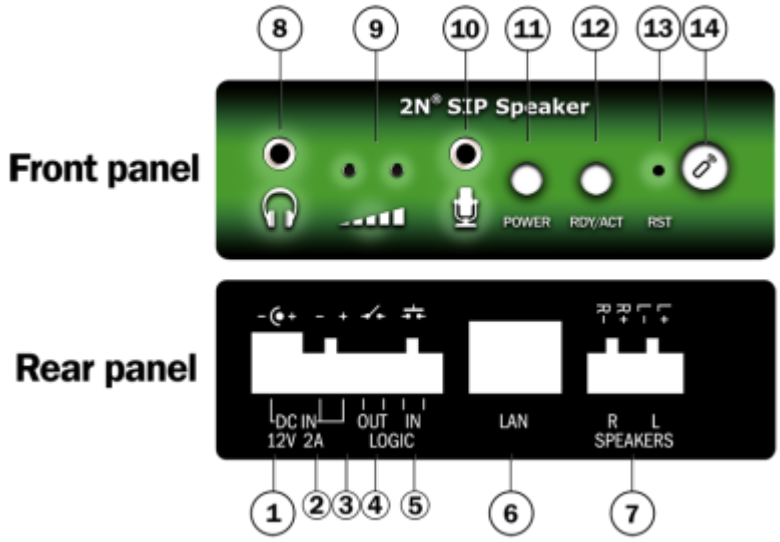


Figure: 2N® SIP Speaker Front and Back Panel

Connectors and Controls:

1. 12 V DC / 2 A power supply adapter connector
2. Alternative power supply connection terminals –
3. Alternative power supply connection terminals +
4. Passive output relay with galvanic isolation for external 24 V / 1 A AC/DC load switching
5. Digital input with galvanic isolation for external sensor/button, etc. connection
6. 10/100BASE-TX LAN RJ-45 connector
7. Integrated amplifier output terminals for 1 or 2 loudspeakers
8. Headset/line output for standard earphones/external amplifier
9. – and + volume control buttons

10. Microphone input (use electrolytic microphone)
11. Power up LED indicator
12. Operational status LED indicators
13. RESET button
14. Infrared signal receiver for remote control and signal reception LED

3. Function and Use

This section provides the basic and extended functions of the **2N® SIP Speaker** product.

Here is what you can find in this section:

- 3.1 Configuration
- 3.2 Default Reset
- 3.3 Basic Functions

3.1 Configuration

2N® SIP Speaker is configured through an integrated administration web server. Connect **2N® SIP Speaker** to the IP network and make sure that **2N® SIP Speaker** is powered.

Description of 2N® Helios IP Network Scanner

The purpose of this application is to find the dynamic IP address of **2N® SIP Speaker** in the local IP network. The application can be downloaded from the 2N web sites www.2n.cz.

1. Run the **2N® Helios IP Network Scanner** installer.
2. The installation wizard will guide you through the installation.

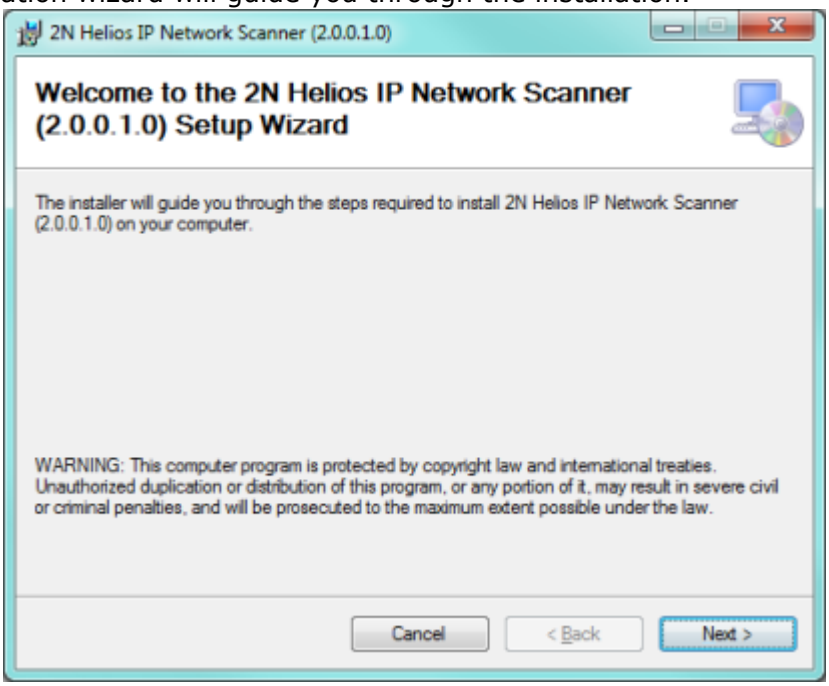

2N Helios IP Network Scanner (2.0.0.1.0)
Welcome to the 2N Helios IP Network Scanner (2.0.0.1.0) Setup Wizard
The installer will guide you through the steps required to install 2N Helios IP Network Scanner (2.0.0.1.0) on your computer.
WARNING: This computer program is protected by copyright law and international treaties. Unauthorized duplication or distribution of this program, or any portion of it, may result in severe civil or criminal penalties, and will be prosecuted to the maximum extent possible under the law.
Cancel
< Back
Next >

Figure: 2N® Helios IP Network Scanner Installation Wizard

3. After installing the **2N® Helios IP Network Scanner** application, run the application using the Start menu of the Microsoft Windows operating system.

4. Upon launch, the application starts searching the LAN automatically for all **2N® SIP Speakers** with an assigned or statically set IP address. The devices are then listed in a table.

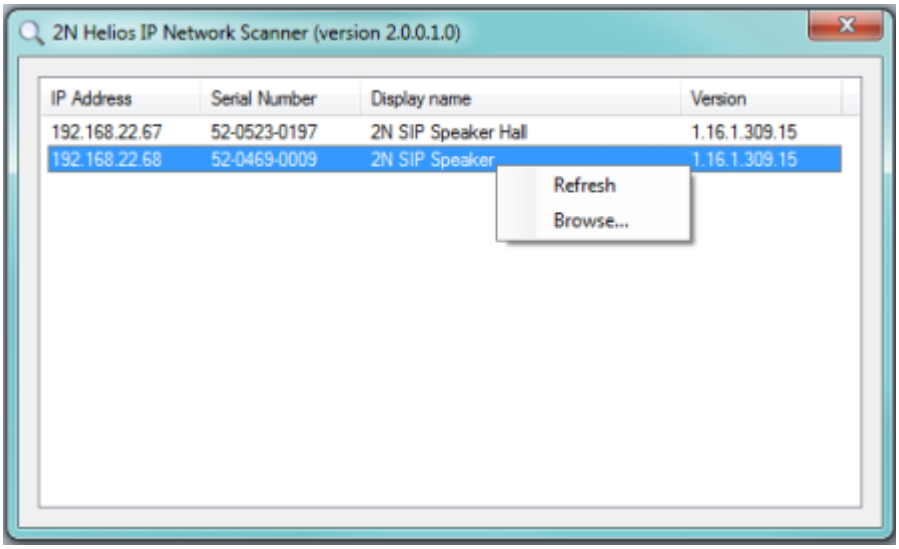


Figure: 2N® Helios IP Network Scanner Window

5. Select the **2N® SIP Speaker** to be configured. Click on it with the right-hand mouse button and select Browse... to open the web browser window, log in to **2N ® SIP Speaker** and start configuring as described in the Login subsection below.

Login

In the web browser enter the IP address of **2N® SIP Speaker**. Subsequently, a login screen will be displayed. The default login username and password are as follows:

- Username: Admin
- Password: 2n

If the login screen does not appear, an incorrect IP address was entered into the web browser or the **2N® SIP Speaker** administration web server was turned off. If you are not sure of the IP address of **2N® SIP Speaker**, use the **2N® Helios IP Network Scanner** application as described in the Description of **2N® Helios IP Network Scanner** subsection.

Find how to switch on the administration web server in the Administration Web Server Switch-On subsection. Please check the IP address entered, or, if applicable, check the way the IP address was obtained as described at the beginning of subsection 3.2 Default Reset.

Language Selection

You can select the language using the tag menu in the right-hand upper corner as shown in Figure below.

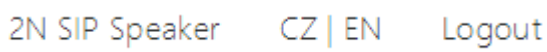


Figure: Language Selection

3.2 Default Reset

Factory Default

The following factory default parameters are available:

Parameter	Default
DHCP	**Off**
IP address	**192.168.1.100**
Mask	**255.255.255.0**
Default gateway	**192.168.1.1**
User name	**Admin**
Password	**2n**

Factory Default Reset

In some cases, it may be useful to reset the **2N® SIP Speaker** factory default values using the RESET button on the back panel. Do so, for example, if **2N® SIP Speaker** ce ases to respond due to, for example, incorrect LAN settings, LAN configuration changes, forgotten password and so on.

Factory Default Reset with Static IP Address

1. Use a thin rigid tool (toothpick or paperclip) to press the RESET button on the front panel. Do not disconnect the device from the power supply while resetting.

Figure: Reset with Static IP Address

2. Keep the RESET button pressed until the RDY/ACT LED stops flashing red and you can hear a beep (for approx. 18 s).
3. Now release the RESET button.

Factory Default Reset with DHCP Client ON

1. Use a thin rigid tool (toothpick or paperclip) to press the RESET button on the front panel and push the - volume button at the same. Do not disconnect the device from the power supply while resetting.

Figure: Reset with DHCP ON

2. Keep the RESET and - volume buttons pressed until the RDY/ACT LED stops flashing red and you can hear a beep (for approx. 18 s).
3. Now release both the buttons.

3.3 Basic Functions

2N® SIP Speaker Button Control

2N® SIP Speaker is equipped with two buttons on the front panel.

Figure: Volume Buttons

Use these buttons to adjust the **2N® SIP Speaker** volume.

2N® SIP Speaker Remote Control

2N® SIP Speaker is equipped with an infrared remote control receiver.

Figure: Remote Control Receiver

Use the remote controller (Part No. 914103E) for volume adjustment.

> **Tip**
>
> - The remote controller is not part of the standard delivery. Order it under Part No. 914103E.

Be sure to set the remote controller into the **2N® SIP Speaker** compatible mode before the first use or after every battery replacement. Follow the steps below:

Remote Controller Setting

1. Press and hold the **MAGIC** button until the controller flashes twice.
2. Press the following buttons sequentially: once the left button, once the right button, twice the middle button and once the left button.

2N® SIP Speaker Status Signalling

2N® SIP Speaker is equipped with colour LEDs on the front panel, which indicate operational statuses.

Figure: Status LEDs

Refer to the table below for the list of available operational statuses:

POWER	Status
OFF	Device powered off
Green (permanent light)	Power on, device in operation

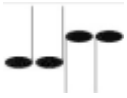
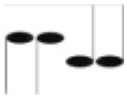
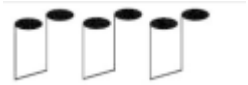
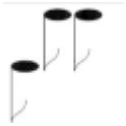
RDY/ACT	Status
OFF	Normal operational status
Green (fast flashing)	Call in progress
Red (slow flashing)	After power up – start of the device. If default values are set – device deletes configuration
Red (permanent light)	Device error

Remote Control	Status
OFF	Normal operational status
Red (one flash)	Infrared remote control signal received

Operational Status Signalling

2N® SIP Speaker signals acoustically changes of and transitions between variable operational statuses. There are different tone combinations for each status change. Refer to table below for the list of signals.

Tones	Meaning
	User activated Used when the user activation code is entered. The activation code is used for user (telephone directory position) activation. Refer to the Telephony Directory subsection for activation code settings.

	User deactivated Used when the user deactivation code is entered. The deactivation code is used for user (telephone directory position) deactivation. An inactive user cannot be called, but the call may be forwarded to the user substitute if predefined. Refer to the Telephony Directory subsection for deactivation code settings.
	**Calendar activated** Used for calendar activation. Use this function, for example, to enable user group ringing in an office. Refer to the Scheduler subsection for activation code settings.
	**Calendar deactivated** Used for calendar deactivation. Use this function, for example, to disable user group ringing in an office and forward the call(s) to a predefined telephone number (reception desk or user mobile phones). Refer to the Scheduler subsection for deactivation code settings.
	Call prolongation confirmation signalling The maximum call duration is set in **2N® SIP Speaker** for security reasons; refer to Miscellaneous subsection.
	Internal application launched Upon **2N® SIP Speaker** power up or restart, the **2N® SIP Speaker** internal application is launched. A successful launch is signalled by this tone combination.
	Connected to LAN, IP address received When the internal application has been launched, **2N® SIP Speaker** logs into the LAN. A successful login is signalled by this tone combination.
	Disconnected from LAN, IP address lost This tone combination signals that the UTP cable has been disconnected from **2N® SIP Speaker**.
	Invalid telephone number or invalid switch activation code **2N® SIP Speaker** allows you to store an extension number or enter the switch opening code. If the number/code is invalid, this tone combination is used.
	**Default reset of network parameters** Enter the default reset code for the network parameters within a 30-second timeout after power up. Refer to Factory Default Reset with Static IP Address and Factory Default Reset with DHCP Client ON for details.

	Call end advance signalling You can set a call time limit in **2N® SIP Speaker** to avoid call blocking. Push a button on your VoIP telephone to prolong the call.
	Connected call when calling from a telephone to 2N® SIP Speaker When calling from your VoIP telephone to **2N® SIP Speaker**, you get a short call connection tone.

4. Technical Parameters

Mechanical and Electrical Parameters

- **Dimensions**: (105 × 34 × 86) mm
- **Dimensions L-profiles**: (130 × 34 × 86) mm (separate accessories – Part No. 914105E)
- **Weight**: 300 g

- **External power supply**: 12 V DC / 1,8A
- **LAN supply**: PoE IEEE 802.3af

- **Status signalling**: 3 RG LEDs on front panel
- **Local control**: 3 buttons on front panel
- **Remote control**: 1 infrared sensor on front panel

- **LAN connection**: RJ-45 connector on back panel, 10/100BASE-TX with Auto-MDIX function

- **Power amplifier output**: 4 terminals on back panel
- **Loudspeaker impedance**: 4–16 Ω
- **Amplifier power output**:

Loudspeaker	12 V / 2 A	PoE
2× 4 Ω	2× 10 W	2× 5 W
2× 8 Ω	2× 9 W	2× 5 W
1× 4 Ω	1× 18 W	1× 10 W
1× 8 Ω	1× 12 W	1× 10 W

- **Frequency range**: 20 Hz – 20 kHz (±0,5 dB)
- **Harmonic distortion**: 0,05 % @ 1 kHz

- **Signal-to-noise ratio**: 91 dB

- **Headset/Line output**: 3,5 mm jack on front panel
- **Microphone input**: Standard electret microphone, Max. Vpp = 1V, Rin = 50 kΩ, Vbias = 1,525 V
- **Digital output**: 24 V / 1 A AC/DC passive output relay, galvanically isolated
- **Digital input**: Only external contact needed

- **Audiocodecs**: G.711 (PCMA, PCMU), G.729 (Annex A, B), L16

5. Supplementary Information

Here is what you can find in this section:

- 5.1 Troubleshooting
- 5.2 Directives, Laws and Regulations
- 5.3 General Instructions and Cautions

5.1 Troubleshooting

For the most frequently asked questions refer to faq.2n.cz.

5.2 Directives, Laws and Regulations

Europe

2N® SIP Speaker conforms to the following directives and regulations:

Directive 1999/5/EC of the European Parliament and of the Council, of 9 March 1999 – on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity

Directive 2006/95/EC of the European Parliament and of the Council of 12 December 2006 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits

Directive 2004/108/EC of the Council of 15 December 2004 on the harmonisation of the laws of Member States relating to electromagnetic compatibility

Commission Regulation (EC) No. 1275/2008, of 17 December 2008, implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for standby and off mode electric power consumption of electrical and electronic household and office equipment

Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment

Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No. 793/93 and Commission Regulation (EC) No. 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC

Directive 2012/19/EC of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment.

Industry Canada

This Class B digital apparatus complies with Canadian ICES-003. / Cet appareil numérique de la classe B est conforme a la norme NMB-003 du Canada.

FCC

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

5.3 General Instructions and Cautions

Please read this User Manual carefully before using the product. Follow all instructions and recommendations included herein.

Any use of the product that is in contradiction with the instructions provided herein may result in malfunction, damage or destruction of the product.

The manufacturer shall not be liable and responsible for any damage incurred as a result of a use of the product other than that included herein, namely undue application and disobedience of the recommendations and warnings in contradiction herewith.

Any use or connection of the product other than those included herein shall be considered undue and the manufacturer shall not be liable for any consequences arisen as a result of such misconduct.

Moreover, the manufacturer shall not be liable for any damage or destruction of the product incurred as a result of misplacement, incompetent installation and/or undue operation and use of the product in contradiction herewith.

The manufacturer assumes no responsibility for any malfunction, damage or destruction of the product caused by incompetent replacement of parts or due to the use of reproduction parts or components.

The manufacturer shall not be liable and responsible for any loss or damage incurred as a result of a natural disaster or any other unfavourable natural condition.

The manufacturer shall not be held liable for any damage of the product arising during the shipping thereof.

The manufacturer shall not make any warrant with regard to data loss or damage.

The manufacturer shall not be liable and responsible for any direct or indirect damage incurred as a result of a use of the product in contradiction herewith or a failure of the product due to a use in contradiction herewith.

All applicable legal regulations concerning the product installation and use as well as provisions of technical standards on electric installations have to be obeyed. The manufacturer shall not be liable and responsible for damage or destruction of the product or damage incurred by the consumer in case the product is used and handled contrary to the said regulations and provisions.

The consumer shall, at its own expense, obtain software protection of the product. The manufacturer shall not be held liable and responsible for any damage incurred as a result of the use of deficient or substandard security software.

The consumer shall, without delay, change the access password for the product after installation. The manufacturer shall not be held liable or responsible for any damage incurred by the consumer in connection with the use of the original password.

The manufacturer also assumes no responsibility for additional costs incurred by the consumer as a result of making calls using a line with an increased tariff.

Electric Waste and Used Battery Pack Handling

Do not place used electric devices and battery packs into municipal waste containers. An undue disposal thereof might impair the environment!

Deliver your expired electric appliances and battery packs removed from them to dedicated dumpsites or containers or give them back to the dealer or manufacturer for environmental-friendly disposal. The dealer or manufacturer shall take the product back free of charge and without requiring another purchase. Make sure that the devices to be disposed of are complete.

Do not throw battery packs into fire. Battery packs may not be taken into parts or short-circuited either.

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